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# **MULTIMEDIA UNIVERSITY**

## **FINAL EXAMINATION**

**TRIMESTER 1, 2017/2018**

**BTQ3894 – TQM FOR MANAGERS**  
(All sections / Groups)

12 October 2017  
2.30 p.m. – 4.30 p.m.  
(2 Hours)

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### **INSTRUCTIONS TO STUDENTS**

1. This Question paper consists of 3 pages (inclusive of the cover page) with 5 Questions only.
2. Attempt **ALL** questions. All questions carry equal marks and the distribution of the marks for each question is given.
3. Please write your answers in the Answer Booklet provided.

**Answer ALL. The marks allocation are stated for each question.**

**QUESTION 1**

(a) Differentiate between internal and external customers.

**[6 Marks]**

(b) Explain the importance of using customer-related results as benchmarking data.

**[8 Marks]**

(c) A 50-volt battery must be between 55 and 45 volts when it leaves the factory. Two hundred samples of batteries have yielded the following data: average charge of 49 volts with a standard deviation of 2.5 volts. What is the process capability?

**[6 Marks]**

**QUESTION 2**

(a) Explain concurrent engineering and its main benefits.

**[12 Marks]**

(b) Process control requires that data be gathered in samples. Discuss random sampling and systematic sampling and provide examples of each sampling method.

**[8 Marks]**

**QUESTION 3**

(a) Explain the Ishikawa's **Seven (7)** basic tools of quality and how they can be used together?

**[12 Marks]**

(b) Define the term customer coproduction. Provide an example and describe the implications it has for service providers.

**[8 Marks]**

**Continued...**

**QUESTION 4**

(a) Discuss the main sources of team conflict and describe the **Four (4)** stages of the conflict resolution process.

**[12 Marks]**

(b) Outline the **Four (4)** stages of the generic process for performing self-assessment

**[8 Marks]**

**QUESTION 5**

(a) Discuss the **Five (5)** components of a quality system.

**[12 Marks]**

(b) Explain **Two (2)** main reasons why the effects of quality on business results are mixed.

**[8 Marks]**

**Useful Formula**

$$C_{pu} = (USL - \mu) / 3\sigma$$

$$C_{pl} = (\mu - LSL) / 3\sigma$$

$$C_{pk} = \min \{C_{pu}, C_{pl}\}$$

Where,

USL = upper specification limit

LSL = lower specification limit

$\mu$  = computed population limit

$\sigma$  = estimated process standard deviation

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